3-29-1999

UD Doctoral Student Undertakes Fernald Soil Clean-Up Study

Maureen E. Schlangen
University of Dayton, mschlangen1@udayton.edu

UNIVERSITY of DAYTON
NEWS RELEASE

March 29, 1999
Contact: Maureen Schlangen or Pam Huber, huber@udayton.edu

UD DOCTORAL STUDENT UNDERTAKES FERNALD SOIL CLEAN-UP STUDY

DAYTON, Ohio — A University of Dayton doctoral student recently received a $24,000 grant from the Ohio Environmental Protection Agency to use new soil analysis techniques to determine the best way to reclaim and environmentally restore the Fernald Superfund site in Hamilton County.

Season Snyder, 25, of McKees Rocks, Pa., who learned the technique from a restoration ecologist in London, said the method will help her to gauge the growth of essential microorganisms in the biologically depleted soil that remained after the site's topsoil was stripped away.

"She paid her own way to England to learn the latest state-of the-art techniques in our field of research and then went out and obtained significant grant funding to support these new research methods for her dissertation," said her adviser, UD biology professor Carl Friese.

Restoring forest, prairie and wetland ecosystems that once occupied the areas around the Fernald site will require essentially the reintroduction of a healthy microbial community, said Snyder, who in March won the graduate research award from the Dayton chapter of Sigma Xi, the Scientific Research Society. A full assessment of the microbial community in soil is a perplexing problem in environmental restoration because most microbes aren't easy to culture and identify. The new method, which involves the extraction of phospholipid fatty acids — ubiquitous "signature molecules" in the microbes' cell membranes — will help her determine which combination of soil, seeds and plants is most effective in creating a natural balance in the area.

Restoration of each system will involve the addition of nutrient-rich topsoil from a healthy ecosystem in the area; after that, she'll place seeds from native and non-native regional

-over-

Office of Public Relations
300 College Park Dayton, Ohio 45469-1679 (937) 229-3241 Fax: (937) 229-3063
http://www.udayton.edu

plants and give nature time to work, gradually reviving an active soil community with every step from seed germination to root decay.

Once the two-year study is complete, she will report her findings to the Ohio EPA, which will use the data to determine the best way to restore the entire site.

Snyder's doctoral dissertation will examine the effects of human disturbance on plant and soil communities in arid and semi-arid rangelands and the subsequent restoration implications.

-30-

For media interviews, call **Season Snyder** at UD's biology lab at (937) 229-2506 or at home at (937) 298-7945. **Carl Friese** can be reached at (937) 229-3011 or via e-mail at friese@neelix.udayton.edu.